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(FILE 'HOME' ENTERED AT 15:17:37 ON 15 SEP 2004)

FILE 'REGISTRY' ENTERED AT 15:18:05 ON 15 SEP 2004

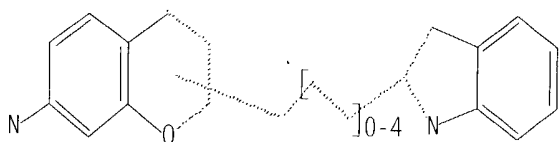
L1 STRUCTURE UPLOADED

L2 2 S L1

L3 33 S L1 FULL

=> d que 13 stat

L1 STR



Structure attributes must be viewed using STN Express query preparation.

L3 33 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 3111 ITERATIONS

33 ANSWERS

SEARCH TIME: 00.00.01

=> fil capl

FILE 'CAPLUS' ENTERED AT 15:19:23 ON 15 SEP 2004

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FILE COVERS 1907 - 15 Sep 2004 VOL 141 ISS 12

FILE LAST UPDATED: 14 Sep 2004 (20040914/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'FIONA' IS DEFAULT FORMAT FOR 'CAPLUS' FILE

=> s 13

10/732,928

Page 2

L4 32 L3

=> d 1-32 bib abs hitstr

L4 ANSWER 1 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:698213 CAPLUS
T1 Mutant Rhodococcus dehalogenase and functionalized chloroalkane substrates
useful for covalent tethering of functional groups to proteins
IN Wood, Keith V.; Los, Georgiy V.; Bulleit, Robert F.; Klaubert, Dieter;
McDonaghi, Mark; Zimprich, Chad
PA Promega Corporation, USA
S0 PCT Int. Appl., 185 pp.
CODEN: P1XXD2
DT Patent
LA English
FAN_CNT 1

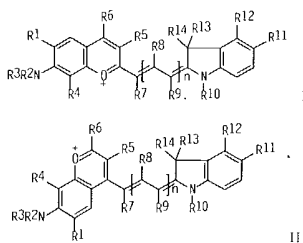
[illegible]

AB A mutant hydrolase optionally fused to a protein of interest is provided. Thus, Rhodococcus haloalkane dehalogenase DhaA with His-272 substituted with Phe is capable of forming a bond with a chloroalkane substrate for the corresponding nonmutant (wild-type) hydrolase which is more stable than the bond formed between the wild-type hydrolase and the substrate. The chloroalkane substrate contains a functional group which binds Ca^{2+} or K^{+} or Na^{+} , is pH sensitive, is a radionuclide, is electron opaque, is a chromophore or fluorophore, is a MRI contrast agent, is a substance that fluoresces in the presence of NO , or is sensitive to reactive oxygen. Substrates for hydrolases comprising one or more functional groups are synthesized comprising TAMRA-, FAM-, and ROX-5-Cl4H2404-Cl or biotin-Cl18H3204-Cl, as methods of using the mutant DhaA and the substrates of the invention for cell imaging in vivo are provided. Mutant *Staphylococcus aureus* β -lactamase (bla2)-based tethering of functional groups is also demonstrated. Also provided is a fusion protein capable of forming a stable bond with a substrate and cells which express the fusion protein.

IT INDEXING IN PROGRESS
IT 744203-70-1P

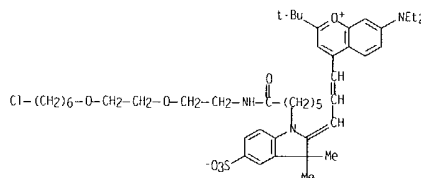
L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:485828 CAPLUS
DN 141:39728
T1 Hydrophilic fluorescent marker dyes based on benzopyrrolyl-polyethylenes
IN Czerny, Peter; Schweder, Bernd; Wenzel, Matthias; Frank, Wilhelm
PA Dyomics GmbH, Germany
SO Eur. Pat. Appl., 24 pp.
CODEN EPXXDW
DT Patent
LA German
EAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1428858	A1	20040616	EP 2003-28306	20031209
R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10258150	A1	20040708	DE 10258150	20021210
US 2004162423	A	20040819	US 2003-732928	20031210
DE 102-1058150	A	20021210		



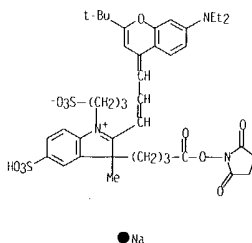
A8 The title dyes [1 and II: R1-R14 = H, alkyl, tert-alkyl, (carboxy)aryl, (hetero)cycloalkyl, alkoxy, OH, NO₂, cyano, etc; R1R2, R2R3, R3R4, R5R7, R9R10, R1R12, R12R13 can form (hetero)aliphatic or aromatic ring; ≥1 of R1-R14 can contain solubilizing or ionizable or ionized substituent(s); ≥1 R1-R14 can contain reactive groups for covalent bonding to substrates; n = 0, 1-3; provisos are given] having improved hydrophilicity, increased extinction coeffs. and photo- and storage stability are useful for optical marking and determination of amino acids, proteins, antibodies, nucleic acids, DNA, RNA, polymers, drugs, etc. For example, adding 75 μL HCl(Ome)₃ in 1 mL pyridine to a solution of 180 μg

L4 ANSWER 1 OF 32 CAPLUS COPYRIGHT 2004 ACS ON STN (Continued)
 RL: BIU (Biological use, unclassified): RCT (Reactant): SPN (Synthetic preparation): BIOL (Biological study): PREP (Preparation): RACT (Reactant or reagent): USCS (Uses)
 (mutant Rhodococcus denahenase and functionalized chloroalkane substrates useful for covalent tethering of functional groups to proteins)
 RN 744203-70-1 CAPLUS
 RN INDEX NAME: NOI YET ASSIGNED



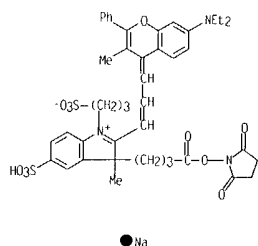
L4 ANSWER 2-7-32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
2-tert-butyl-7-diethylamino-4-methylchromenylmethyl tetrafluoroborate and 242 mg 3-(3-ethoxycarbonylpropyl)-2,3-dimethyl-5-sulfonato-1,3-
difluorocyclopentyl-3H-indolium Na salt in 50 mL ACN, stirring the mixt. for
30 min at 140°. evapp. the reaction mixt., refluxing the solid
residue in a mixt. of 10 mL acetone and 10 mL of 2 M HCl and neutralizing
with NaHCO₃ gave 145 mg of carboxypropyl-functional polyimethide dye [ii]:
R1 = R4 = R5 = R7 = R8 = R9 = R12 = R13 = H. R2 = R3 = Et. R6 = Me3C. R10
= O3S(CH2)3. R11 = SO3. R14 = Me. n = 1] as prep. A. This (15 mg) was
converted to active ester with 4 mg N-hydroxysuccinimide in the presence
of 14 mg dicyclohexyl carbodiimide and used to prep. a streptavidin
conjugate showing narrowed aggregation bands in UV-Vis spectrum.

IT	704891-70-3P	704891-77-0P	704891-81-6P	704891-87-2P	704891-89-4P	704891-91-6P
	RL: BUU (Biological use, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses) (hydrophilic fluorescent marker dyes based on benzopyrro-polymethines)					
RN	704891-70-3 CAPLUS					
CN	3H-indolium, 2,3-[7- (diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-3,4'-[2,5-dioxo-1-pyrroliidinyl]-oxy-1,3-dimethyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)					

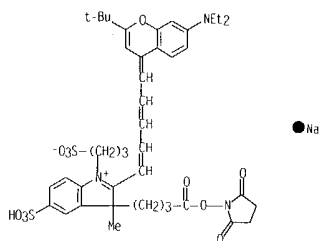


RN 704891-77-0 CAPLUS
CN 3H-Indolium, 2-[3-[7-(diethylamino)-3-methyl-2-phenyl-4H-1-benzopyran-4-ylidene]-1-propenyl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)

L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

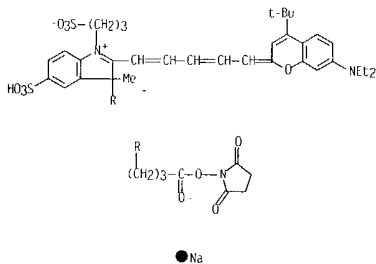


RN 704891-81-6 CAPLUS
CN 3H-Indolium, 2-[5-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1,3-pentadienyl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)

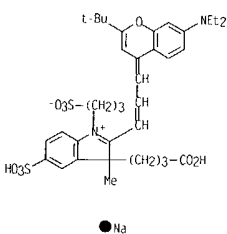


RN 70-1891-87-2 CAPLUS
CN 3H-indolium, 2-[3-[7-(diethylamino)-4-(1,1-dimethylethyl)-2H-1-benzopyran-2-ylidene]-1-propenyl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)

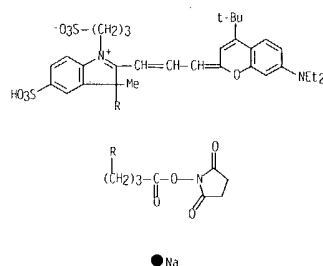
L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
2-ylidene]-1,3-pentadienyl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt
(9CI) (CA INDEX NAME)



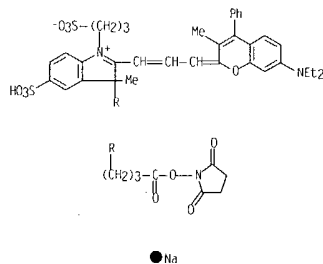
IT	704891-69-0P 704891-76-9P 704891-80-5P 704891-86-1P 704891-88-3P 704891-90-7P RL: IMF (Industrial manufacture): RCT (Reactant): PREP (Preparation): RACT (Reaction or reagent) (preparation and esterification with N-hydroxy succinimide; hydrophilic fluorescent marker dyes based on benzopyrrolyl-polymethines)
RN	704891-69-0 CAPLUS
CN	3H-Indolium, 3-[(3-carboxypropyl)-2-[3-[7-(diethylamino)-2-(1,1,1- dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-3-methyl-5-sulfo-1- (3-sulfo)propyl]-, inner salt, monosodium salt (9CI) (CA INDEX NAME)



L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



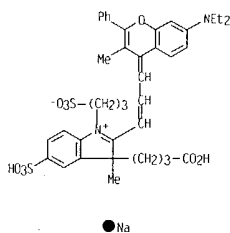
RN 704891-89-4 CAPLUS
CN 3H-Indolium, 2-[3-[7-(diethylamino)-3-methyl-4-phenyl-2H-1-benzopyran-2-ylidene]-1-propenyl]-3-[4-[(2,5-dioxo-1-pyrrolidinyl)oxy]-4-oxobutyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, sodium salt (9CI) (CA)
[INDEX NAME]



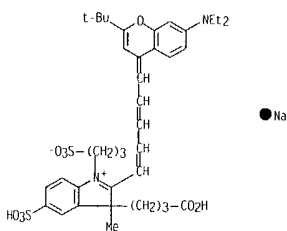
RN 704891-91-8 CAPLUS
CN 3H-Indolium, 2-[5-[7-(diethylamino)-4-(1,1-dimethylethyl)-2H-1-benzopyran-

L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

RN 704891-76-9 CAPLUS
 CN 3H-Indolium, 3-(3-carboxypropyl)-2-[3-{7-(diethylamino)-3-methyl-2-phenyl-4H-1-benzopyran-4-ylidene}-1-propenyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, monosodium salt (9CI) (CA INDEX NAME)

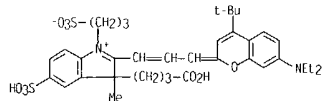


RN 704891-80-5 CAPLUS
 CN 3H-Indolium, 3-(3-carboxypropyl)-2-[5-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1,3-pentadienyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, monosodium salt (9CI) (CA INDEX NAME)



RN 704891-86-1 CAPLUS
 CN 3H-Indolium, 3-(3-carboxypropyl)-2-[3-[7-(diethylamino)-4-(1,1-dimethylethyl)-2H-1-benzopyran-2-ylidene]-1-propenyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)-, inner salt, monosodium salt (9C1) (CA INDEX NAME)

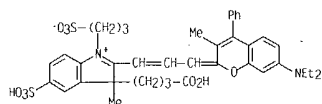
L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



● Na

RN 704891-88-3 CAPLUS

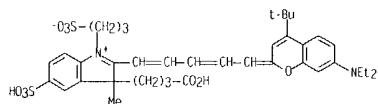
CN 3H-Indolium, 3-[(3-carboxypropyl)-2-[3-[7-(diethylamino)-3-methyl-4-phenyl-2H-1-benzopyran-2-ylidene]-1-propenyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)]-, inner salt, monosodium salt (9C1) (CA INDEX NAME)



● Na

RN 704891-90-7 CAPLUS

CN 3H-Indolium, 3-[(3-carboxypropyl)-2-[5-[7-(diethylamino)-4-(1,1-dimethylethyl)-2H-1-benzopyran-2-ylidene]-1,3-pentadienyl]-3-methyl-5-sulfo-1-(3-sulfopropyl)]-, inner salt, monosodium salt (9C1) (CA INDEX NAME)



● Na

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

L4 ANSWER 3 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:955287 CAPLUS

DN 141:119670

TI Quantitative comparison of long-wavelength Alexa Fluor dyes to Cy dyes: Fluorescence of the dyes and their bioconjugates

AU Berlier, Judith E.; Rothe, Anca; Buller, Gayle; Bradford, Jolene; Gray, Diane R.; Filanowski, Brian J.; Telford, William G.; Yue, Stephen; Liu, Jixiang; Cheung, Ching-Ying; Chang, Wesley; Hirsch, James D.; Beechem, Joseph M.; Haugland, Rosaria P.; Haugland, Richard P.

CS Molecular Probes, Inc., Eugene, OR, USA

SO Journal of Histochemistry and Cytochemistry (2003), 51(12), 1699-1712

CODEN: JHCYAS; ISSN: 0022-1554

PB Histochemical Society, Inc.

DT Journal

LA English

AB Amine-reactive N-hydroxysuccinimidyl esters of Alexa Fluor fluorescent dyes with principal absorption maxima at about 555 nm, 633 nm, 647 nm, 660 nm, 680 nm, 700 nm, and 750 nm were conjugated to antibodies and other selected proteins. These conjugates were compared with spectrally similar protein conjugates of the Cy3, Cy5, Cy5.5, Cy7, DY-630, DY-635, DY-680, and Atto 565 dyes. As N-hydroxysuccinimidyl ester dyes, the Alexa Fluor 555 dye was similar to the Cy3 dye, and the Alexa Fluor 647 dye was similar to the Cy5 dye with respect to absorption maxima, emission maxima, Stokes shifts, and extinction coeffs. However, both Alexa Fluor dyes were significantly more resistant to photobleaching than were their Cy dye counterparts. Absorption spectra of protein conjugates prepared from these dyes showed prominent blue-shifted shoulder peaks for conjugates of the Cy dyes but only minor shoulder peaks for conjugates of the Alexa Fluor dyes. The anomalous peaks, previously observed for protein conjugates of the Cy5 dye, are presumably due to the formation of dye aggregates. Absorption of light by the dye aggregates does not result in fluorescence, thereby diminishing the fluorescence of the conjugates. The Alexa Fluor 555 and the Alexa Fluor 647 dyes in protein conjugates exhibited significantly less of this self-quenching, and therefore the protein conjugates of Alexa Fluor dyes were significantly more fluorescent than those of the Cy dyes, especially at high degrees of labeling. The results from our flow cytometry, immunocytochem., and immunohistochem. expts. demonstrate that protein-conjugated, long-wavelength Alexa Fluor dyes have advantages compared to the Cy dyes and other long-wavelength dyes in typical fluorescence-based cell labeling applications.

IT 350496-73-0, DY-630 350496-73-00, DY-630, protein

conjugates

RL: PRP (Properties)
(fluorescence of long-wavelength Alexa Fluor dyes, Cy dyes and their protein bioconjugates)

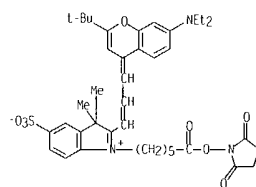
RN 350496-73-0 CAPLUS

CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9C1) (CA INDEX NAME)

L4 ANSWER 2 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

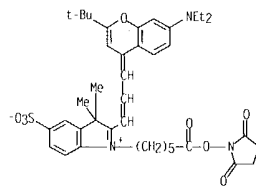
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RN 350496-73-0 CAPLUS

CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9C1) (CA INDEX NAME)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:371283 CAPLUS
DN 139:225035

TI Incorporation of reporter molecule-labeled nucleotides by DNA polymerases.
II. High-density labeling of natural DNA

AU Tasara, Taurai; Angerer, Bernhard; Diamond, Martine; Winter, Holger;
Doerhoefer, Sabine; Huebscher, Ulrich; Amacker, Mario

CS PSE-B, EPFL, Gnothi SA, Lausanne, CH-1015, Switz.

SO Nucleic Acids Research (2003). 31(10). 2636-2646

CODEN: NARHAD; ISSN: 0305-1048

PB Oxford University Press

DT Journal

LA English

AB The modification of nucleic acids using nucleotides linked to detectable reporter or functional groups is an important exptl. tool in modern mol. biol. This enhances DNA or RNA detection as well as expanding the catalytic repertoire of nucleic acids. Here we present the evaluation of a broad range of modified deoxyribonucleoside 5'-triphosphates (dNTPs) covering all four naturally occurring nucleobases for potential use in DNA modification. A total of 30 modified dNTPs with either fluorescent or non-fluorescent reporter group attachments were systematically evaluated individually and in combinations for high-d. incorporation using different model and natural DNA templates. Furthermore, we show a side-by-side comparison of the incorporation efficiencies of a family A (Tag) and B (VentR exo-) type DNA polymerase using the differently modified dNTP substrates. Our results show superior performance by a family B-type DNA polymerase, VentR exo-, which is able to fully synthesize a 300 bp DNA product when all natural dNTPs are completely replaced by their biotin-labeled dNTP analogs. Moreover, we present systematic testing of various combinations of fluorescent dye-modified dNTPs enabling the simultaneous labeling of DNA with up to four differently modified dNTPs.

IT 350496-73-00. Dy630, dNTP conjugates

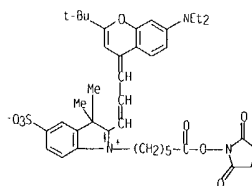
RL: BSU (Biological study, unclassified); BIU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(evaluation of modified dNTP analogs for high-d. incorporation into DNA)

RN 350496-73-0 CAPLUS

CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

L4 ANSWER 4 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RE CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:371282 CAPLUS

DN 139:214645

TI Incorporation of reporter molecule-labeled nucleotides by DNA polymerases.
I. Chemical synthesis of various reporter group-labeled 2'-deoxyribonucleoside-5'-triphosphates

AU Giller, Gerald; Tasara, Taurai; Angerer, Bernhard; Muhlegger, Klaus;
Amacker, Mario; Winter, Holger

CS PSE-B, EPFL, Gnothi SA, Lausanne, CH-1015, Switz.

SO Nucleic Acids Research (2003). 31(10). 2630-2635

CODEN: NARHAD; ISSN: 0305-1048

PB Oxford University Press

DT Journal

LA English

OS CASREACT 139:214645

AB Fluorescent-labeled DNA is generated through enzymic incorporation of fluorophore-linked 2'-deoxyribonucleoside-5'-triphosphates (dNTPs) by DNA polymerases. We describe the synthesis of a variety of dye-labeled dNTPs. Amino-linker-modified 5'-triphosphates of all four naturally occurring nucleobases were used as precursors. Con. available dyes were coupled to the amino function of the side chain. In addition, we attached novel fluorophore derivs. The labeled products were obtained in at least 96% purity after HPLC purification. Enzymic incorporation into DNA and subsequent extension of the modified DNA chain were studied. VentR exo- DNA polymerase and a defined template-primer system were used to analyze each dye-labeled dNTP derivative. Our data suggest that the incorporation efficiency depends on the selected dye, the nucleobase or a combination of both.

IT 686721-42-6P 686721-43-7P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation of reporter group-labeled 2'-deoxyribonucleoside-5'-triphosphates for use as substrates for enzymic incorporation into DNA)

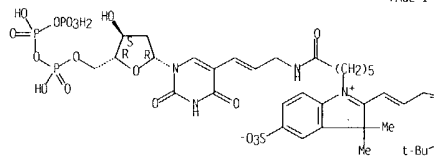
RN 686721-42-6 CAPLUS

CN 3H-Indolium, 1-[6-[[3-[1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonoxy)phosphinyl]oxy]phosphinyl]-D-erythro-pentofuranosyl]-1,2,3,4-tetrahydro-2,4-dioxo-5-pyrimidinyl]-2-propenyl]amino]-6-oxohexyl]-2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

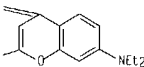
Absolute stereochemistry.
Double bond geometry unknown.

L4 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

PAGE 1-A



PAGE 1-B

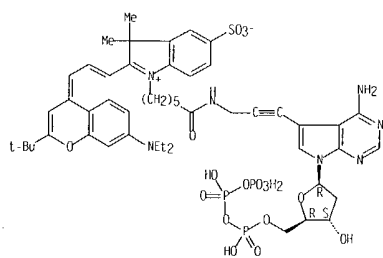


RN 686721-43-7 CAPLUS

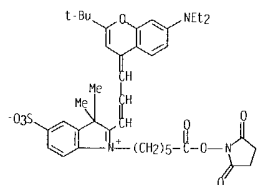
CN 3H-Indolium, 1-[6-[[3-[4-amino-7-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonoxy)phosphinyl]oxy]phosphinyl]-D-erythro-pentofuranosyl]-7H-pyrrolo[2,3-d]pyrimidin-5-yl]-2-propenyl]amino]-6-oxohexyl]-2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

L4 ANSWER 5 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



IT 350496-73-0, dy 630
 RL: RCT (Reactant): RACT (Reactant or reagent)
 (preparation of reporter group-labeled 2'-deoxyribonucleoside-5'-triphosphates for use as substrates for enzymic incorporation into DNA)
 RN 350496-73-0 CAPLUS
 CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)



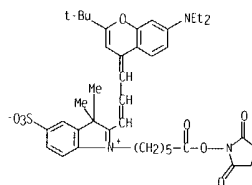
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:255074 CAPLUS
 DN 140:195753
 TI Regioselective Nitrilotriacetic Acid-Cellulose-Nickel-Complexes for Immobilisation of His6-Tag Proteins
 AU Diekmann, Stephan; Siegmund, Grit; Roecker, Anja; Klemm, Dieter O.
 CS Institute for Molecular Biotechnology, Jena, D-07745, Germany
 SO Cellulose (Dordrecht, Netherlands) (2003), 10(1), 53-63
 CODEN: CELLE8; ISSN: 0969-0239
 PB Kluwer Academic Publishers
 OT Journal
 LA English
 AB The mol. and supramol. structural design of cellulose derivs. represents important synthetic and structure anal. aspects of cellulose chemical. Such tailored cellulose product can be used as substrate for proteins and biocatalysts. New cellulose derivs. modified with nitrilotriacetic acid (NTA) residues, were synthesized by a nucleophilic substitution reaction starting from cellulose tosylates. These derivs. are able to form clear and thin films on glass surfaces and show remarkable complexation properties concerning nickel(II). The immobilization of His-tag proteins succeeded on the surface of the transparent cellulose films. The detection of the specific cellulose-protein-binding results from optical measurements of fluorescence effects transmitted by optically marked synthetic proteins designed de novo.

IT 350496-73-0, DY630
 RL: RGT (Reagent): RACT (Reactant or reagent)
 (as label, regioselective nitrilotriacetic acid-cellulose-nickel-complexes for immobilization of his6-tag proteins)
 RN 350496-73-0 CAPLUS
 CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)



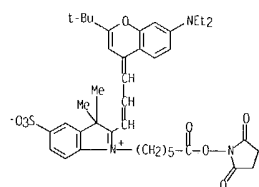
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

L4 ANSWER 7 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:898772 CAPLUS
 DN 138:103114
 TI Spectroscopic study and evaluation of red-absorbing fluorescent dyes
 AU Buschmann, Volker; Weston, Kenneth D.; Sauer, Markus
 CS Physikalisch-Chemisches Institut, Universitaet Heidelberg, Heidelberg, 69120, Germany
 SO Bioconjugate Chemistry (2003), 14(1), 195-204
 CODEN: BCHCES; ISSN: 1043-1802
 PB American Chemical Society
 OT Journal
 LA English
 AB The spectroscopic characteristics (absorption, emission, and fluorescence lifetime) of 13 com. available red-absorbing fluorescent dyes were studied under a variety of conditions. The dyes included in this study are Alexa 647, ATTO 655, ATTO 680, Bodipy 630/650, Cy 5, Cy 5.5, DiO, DY 630, DY 635, DY 640, DY 650, DY 655, and EV0blue 30. The thorough characterization of this class of dyes will facilitate selection of the appropriate red-absorbing fluorescent labels for applications in fluorescence assays. The influences of polarity, viscosity, and the addition of detergent (Tween20) on the spectroscopic properties were investigated, and fluorescence correlation spectroscopy (FCS) was utilized to assess the photophys. properties of the dyes under high excitation conditions. The dyes can be classified into groups based on the results presented. For example, while the fluorescence quantum yield of ATTO 655, ATTO 680, and EV0blue 30 is primarily controlled by the polarity of the surrounding medium, more hydrophobic and structurally flexible dyes of the DY-family are strongly influenced by the viscosity of the medium and the addition of detergents. Covalent binding of the dyes to biotin and subsequent addition of streptavidin results in reversible fluorescence quenching or changes in the relaxation time of other photophys. processes of some dyes, most likely due to interactions with tryptophan residues in the streptavidin binding site.

IT 350496-73-0, DY 630
 RL: ARG (Analytical reagent use): ANST (Analytical study): USES (Uses)
 (spectroscopic study and evaluation of red-absorbing fluorescent dyes)
 RN 350496-73-0 CAPLUS
 CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

L4 ANSWER 7 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:123262 CAPLUS

DN 136:178943

TI Method for detecting mutations and their effects upon mRNA levels using array hybridization and heteroduplex-binding reagents

IN Kappel, Andreas; Polakowski, Thomas; Pignot, Marc; Windhab, Norbert; Behrendorf, Heike; Muth, Jochen

PA Nanogen Recogonics G.m.b.H., Germany

SO PCT Int. Appl., 145 pp.

CODEN: PIXX02

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002012553	A2	20020214	WO 2001-EP8127	20010713
WO 2002012553	A3	20030130		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
DE 10038237	A1	20020214	DE 2000-10038237	20000804
AU 2001070635	A5	20020218	AU 2001-70635	20010713
EP 1307589	A2	20030507	EP 2001-949494	20010713
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LT, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2004520010	T2	20040708	JP 2002-517837	20010713
US 2004110161	A1	20040610	US 2003-343859	20031124
PRAI DE 2000-10038237	A	20000804		
WO 2001-EP8127	W	20010713		

AB The invention relates to a method for simultaneously detecting mutations in different nucleotide sequences and for determining the transcription rate of mutated and non-mutated nucleotide sequences. RNA or cDNA samples are hybridized to an array of probes, such as a DNA microarray. Intensity of signal can give the relative transcript level and hence the transcription rate. Mutation can be detected by incubation with a heteroduplex-specific binding factor, such as a single strand-specific nuclease or a single-stranded DNA-binding protein such as mutS. The factor may be labeled, e.g. with a suitable dye. The use of the mutS protein of Escherichia coli or Thermus aquaticus is demonstrated. The proteins were manufactured in useful quantities as fusion proteins with maltose-binding protein. Use of Cy3-labeled mutS protein to detect base mismatches is demonstrated in reconstruction expts. Optimization expts. are also

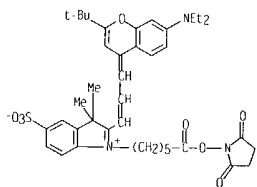
L4 ANSWER 8 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

IT 350496-73-0D, DY 630, conjugates with base mismatch-binding proteins

RL: ARU (Analytical role, unclassified); ANST (Analytical study) (as label: method for detecting mutations and their effects upon mRNA levels using array hybridization and heteroduplex-binding reagents)

RN 350496-73-0 CAPLUS

CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxahexyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)



L4 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:869588 CAPLUS

DN 136:7646

TI Stable near-IR fluorescent marker dyes based on benzopyrylium-polymethines and their use

IN Czerney, Peter; Frank, Wilhelm; Lehmann, Frank; Schweder, Bernd; Wenzel, Matthias

PA Dyomics G.m.b.H., Germany

SO PCT Int. Appl., 28 pp.

CODEN: PIXX02

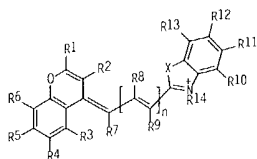
DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001090253	A1	20011129	WO 2001-DE1946	20010522
W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
DE 10025820	A1	20011206	DE 2000-10025820	20000523
DE 10025820	C2	20030626		
AU 2001065811	A5	20011203	AU 2001-65811	20010522
BR 2001006715	A	20020416	BR 2001-6715	20010522
EP 1283855	A1	20030219	EP 2001-943135	20010522
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LT, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
JP 2003534435	T2	20031118	JP 2001-587056	20010522
US 2002115862	A1	20020822	US 2002-31741	20020122
US 6750346	B2	20040615		
PRAI DE 2000-10025820	A	20000523		
DE 2000-20022277	U	20000523		
WO 2001-DE1946	W	20010522		
OS MARPAT 136:7646				
GI				

L4 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



I

AB The invention relates to so-called laser-compatible NIR marker dyes based on polymethines for use in optical, in particular, fluorescence optical determination and detection methods, for example, in the fields of medicine, pharmaceuticals and in the areas of life science, materials science, and environmental science. The aim of the invention was to create NIR marker dyes based on polymethine which have a high degree of photostability and stability in storage as well as a high fluorescence yield and which can be excited to fluorescence in the easiest possible manner by means of laser radiation in the visible or NIR spectral range, particularly with light of an argon, helium/neon, or diode laser. According to the invention, dyes based I (R1-R14 = H, organic group with adjacent groups optionally forming fused aromatic rings, OH, whereby at least one group is solubilizing in water and at least one group can react with the substance to be marked: X = O, S, Se, alkylimino, dialkylmethylene; n = 0-3) are used.

IT 375395-99-6P

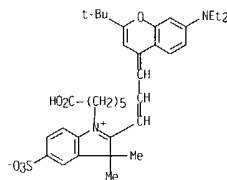
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(dye; production of stable near-IR fluorescent marker dyes based on benzopyrylium-polymethines)

RN 375395-99-6 CAPLUS

CN 3H-Indolium, 1-(5-carboxypentyl)-2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-3,3-dimethyl-5-sulfo-, inner salt (9C1) (CA INDEX NAME)

L4 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:380020 CAPLUS

DN 135:104506

TI Tailor-made dyes for fluorescence correlation spectroscopy (FCS)

AU Czerney, Peter; Lehmann, Frank; Wenzel, Matthias; Buschmann, Volker;

Dietrich, Anja; Mohr, Gerhard J.

CS Dyomics GmbH, Bioinstrumentezentrum, Jena, D-07745, Germany

SO Biological Chemistry (2001), 382(3), 495-498

CODEN: BICHF3; ISSN: 1431-6730

PB Walter de Gruyter GmbH & Co. KG

DT Journal

LA English

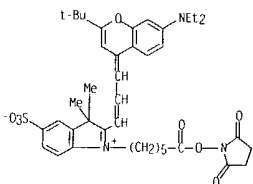
AB Two new fluorescent labels are presented that are optimized for excitation with He/Ne laser and red diode lasers. Application in FCS and labeling of proteins and oligomers are demonstrated. A strong rise of quantum yield and emission life time upon binding to biomols. are characteristic features of the dyes.

IT 350496-73-0, DY 630

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (DY 630: dyes for fluorescence correlation spectroscopy (FCS))

RN 350496-73-0 CAPLUS

CN 3H-Indolium, 2-[3-[7-(diethylamino)-2-(1,1-dimethylethyl)-4H-1-benzopyran-4-ylidene]-1-propenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9C1) (CA INDEX NAME)



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:189075 CAPLUS

DN 130:259331

TI Organic electroluminescent device

IN Okada, Hisashi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 24 pp.

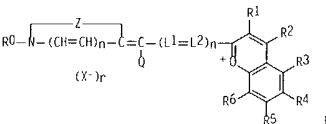
CODEN: JKKXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11074078	A2	19990316	JP 1998-50798	19980303
	US 6143434	A	20001107	US 1998-86554	19980529
PRAI	JP 1997-179274	A	19970704		
	JP 1998-50798	A	19980303		
OS	MARPAT 130:259331				
GI					



AB The invention relates to an organic electroluminescent device that comprises a compound represented by I (R1-6 = H, or substituted group; Z = a group of elements necessary to complete five or six member rings; R0 = allyl, aryl, and heterocyclic group; n = 0 or 1; L1-Z = methine or substituted methine; m = 0-3 integer; Q = H, aliphatic hydrocarbon, aryl, heterocyclic, and it may form cyclic ring together with R0; X- = anion; r = integer).

IT 111929-49-8

RL: DEV (Device component use); USES (Uses) (organic electroluminescent device)

RN 111929-49-8 CAPLUS

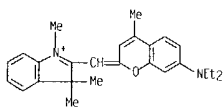
CN 3H-Indolium, 2-[(7-(diethylamino)-4-methyl-2H-1-benzopyran-2-ylidene)methyl]-1,3,3-trimethyl-, perchlorate (9C1) (CA INDEX NAME)

CM 1

CRN 111929-48-7

CMF C26 H31 N2 O

L4 ANSWER 11 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



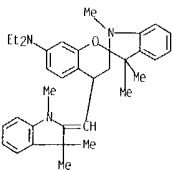
CM 2

CRN 14797-73-0

CMF C1 C4



L4 ANSWER 12 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
 trimethyl-2H-indol-2-ylidene)methyl]-N,N-diethyl-1',3,3',4-tetrahydro-
 1',3',3'-trimethyl- (9C1) (CA INDEX NAME)



L4 ANSWER 12 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:10610 CAPLUS

DN 126:104050

TI Synthesis and photochromic properties of spiro[2.3-dihydronaphtho[1,8-de][1,3]thiazine-2,2':-[2H]chromenes]

AU Zakhs, E. R.; Martynova, V. P.; Ponyaev, A. I.

CS St. Petersburg Gos. Tekhnol. Inst., St. Petersburg, Russia

SO Zhurnal Obshchei Khimii (1996), 66(8), 1387-1398

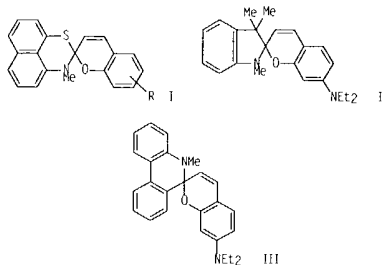
CODEN: ZOKH44; ISSN: 0044-460X

PB Nauka

DT Journal

LA Russian

GI



AB Title compds., e.g., I (R = H, 7'-NEt2, 8'-OMe) were prepared starting from 8-nitro-1-naphthalenesulfonyl chloride. Their photochromic properties were compared with those of spiro compds. II and III. In alc. solution II and III were nearly completely converted to the colored form, whereas I were only ~3% in the colored form. The kinetics and mechanism of the photoisomerization were examined.

IT 185908-67-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and photochromism of spiro[2.3-dihydronaphtho[1,8-de][1,3]thiazine-2,2':-[2H]chromenes])

RN 185908-67-2 CAPLUS

CN Spiro[2H-1-benzopyran-2,2':-[2H]indol]-7-amine, 4-[(1,3-dihydro-1,3,3-

L4 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:101980 CAPLUS

DN 114:101980

TI Preparation of benzothiazole derivatives as antitumor agents

IN Shishido, Tadao; Okada, Hisashi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN,CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02172916	A2	19900704	JP 1988-327301	19881223
JP 2745023	B2	19980428		
PRAI JP 1988-327301		19881223		

OS MARPAT 114:101980

GI For diagram(s), see printed CA Issue.

AB The title compds. [I: R = alkyl, alkenyl, etc.; R1-R5 = H, halo, (substituted) alkyl, alkenyl, aryl, etc.; X = anion] and other heterocyclic systems such as naphthothiazole, oxazole, and quinoline compds., were prepared. A mixture of salt II and thione III was heated at 150°, purified by silica gel chromatog., and treated with NaClO4 in MeOH to give 20% I (R = Et, R1 = R3 = R4 = R6 = H, R2 = Me, R5 = Et2N, X = ClO4), which at 10 mg/kg/day in mice transplanted with P388 tumor cells increased the survival rate by 126%. Also prepared and tested were 31 addnl. I.

IT 111929-49-8P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BTOL (Biological study); PREP (Preparation); USES (Uses)
 (preparation of, as antitumor agent)

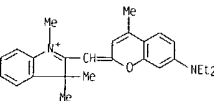
RN 111929-49-8 CAPLUS

CN 3H-Indolium, 2-[[7-(diethylamino)-4-methyl-2H-1-benzopyran-2-ylidene)methyl]-1,3,3-trimethyl-, perchlorate (9C1) (CA INDEX NAME)

CM 1

CRN 111929-48-7

CMF C26 H31 N2 O



CM 2

L4 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

CRN 14797-73-0
CMF C1 04

L4 ANSWER 14 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:39656 CAPLUS

DN 108:39656

TI Methine dyes

IN Ukai, Toshinao; Okada, Hisashi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKKXAF

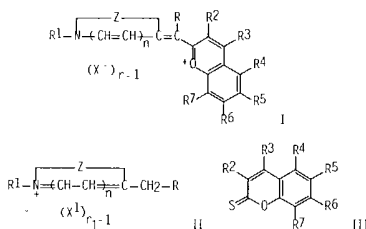
DT Patent

LA Japanese

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62187767	A2	19870817	JP 1986-29621	19860213
JP 1986-29621		19860213		

G1



AB Dyes I are prepared by the condensation of heterocyclic quaternary ammonium salts II with 2-H-chromene-2-thione derivs. III, where $n = 0, 1$; R = H, (un)substituted alkyl, alkenyl, alkaryl, aryl, CM, CO₂H, alkoxycarbonyl, alkylsulfonyl, arylsulfonyl, acetal, Bz; R₁ = (un)substituted alkyl, alkenyl, or aryl groups; or R₁ binding to R₂ to form rings; R₂-7 = H, halogen, (un)substituted alkyl, alkenyl, aryl, or alkyl, alkoxy, aryloxy, alkoxycarbonyl, acyloxy, acyl, CM, CM₂, all heterocyclic groups, same or different R₂ and R₃, R₄ and R₅, R₅ and R₆, R₆ and R₇ optionally forming rings; Z = atomic groups necessary for forming five-membered and six-membered rings, optionally with substituted groups all condensing with hard rings; X⁻ and X¹⁻ are anions; R and r₁ = 1 or 2, r = 1 when forming intramol. salts. Thus, 17.5 g 3-ethyl-2-methylbenzylthiazolium p-toluene sulfonate and 8.8 g 4-methyl-2-H-chromene-2-thione were heated 15 h at 150°.

L4 ANSWER 14 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

mixed with 20 mL methanol and 40 mL acetone, mixed with 15.7 g 60% perchloric acid, and stirred to deposit crystals, and the crystals were washed with acetone, mixed with 20 mL methanol and 40 mL acetone, stirred 30 min, filtered, and washed with acetone to give 13.2 g 3-ethyl-2-[(4-methyl-2-H-chromene-2-iridium)methyl]benzylthiazolium perchlorate.

IT 111929-49-8

RL MSC (Miscellaneous)
(dyes)

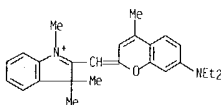
RN 111929-49-8 CAPLUS

CN 3H-Indolium, 2-[[7-(diethylamino)-4-methyl-2H-1-benzopyran-2-ylidene]methyl]-1,3,3-trimethyl-, perchlorate (9C1) (CA INDEX NAME)

CM 1

CRN 111929-48-7

CMF C26 H31 N2 O



CM 2

CRN 14797-73-0

CMF C1 04



L4 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:603733 CAPLUS

DN 103:203733

TI Imaging process

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKKXAF

DT Patent

LA Japanese

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60118852	A2	19850626	JP 1983-225920	19831130
JP 04021598	B4	19920410		
JP 1983-225920		19831130		

AB An imaging process is claimed which involves the following steps: (1) formation of patterns on a support by using conductive particles containing a sublimable or volatile dye, (2) spreading of dye-free conductive particles whose particle size is greater than that of the dye-containing particles, and (3) hot-pressing the particle-coated support to effect sublimation or volatilization of the dye. Particles containing sublimable or volatile color formers may be used instead of the dye-containing particles. The particle images are preferably formed by using electrostatic, and transferred onto the support (or a receptor). Thus, spherical particles composed of magnetite powder and a melamine resin were dispersed in a solution containing C. I. Disperse Red and Et cellulose. Then the dispersion was spray dried. The resultant coated particles then dispersed in an ECR 34 solution and the dispersion spray dried to give dye-containing particles (10-20 μ diameter; 8×10^8 /g). Sep., magnetite-melamine resin mixture particles were coated with ECR 24 to give dye-free particles (particle size 20-25 μ ; 3×10^8 /g). The above 2 types of particles were used to give electrostatic, images with good color tone gradient reproducibility.

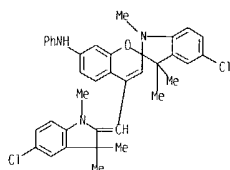
IT 99124-05-7

RL TEM (Technical or engineered material use): USES (Uses)
(electrostatic, toners containing, for color process)

RN 99124-05-7 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)methyl]-1'-3'-dihydro-1',3',3'-trimethyl-N-phenyl-, (9C1) (CA INDEX NAME)

L4 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 16 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:603732 CAPLUS

DN 103:203732

TI Electrostatographic dye image developer particles

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokyo Koho. 8 pp.

CODEN: JKKXAF

OT Patent

LA Japanese

FAN, CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60118850	A2	19850626	JP 1983-225922	19831130
	JP 06019592	B4	19940316		
PRAI	JP 1983-225922		19831130		

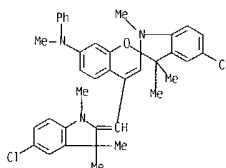
AB The title particles are composed of sublimable or vaporizable dye-containing color-forming particles which are not fixed on the image receptor and auxiliary particles which do not contain the above dye and do not attach to the image receptor having the particle diameter larger than that of the color-forming particles. The auxiliary particles may be obtained by coating magnetite particles with Sumitex M3 and the color-forming particles by coating the auxiliary particles with a dye composition containing a sublimable dye. The above particles may be used to develop electrostatic latent images to provide a master having particle images which may then be laid on a plain paper and dye images are then formed on the plain paper by sending them through a pressing type heater.

IT 84981-40-8

RL USES (Uses)
(electrostatog. dye image developer particles with color-forming particles containing)

RN 84981-40-8 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 5'-chloro-4-[(5-chloro-1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 16 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

L4 ANSWER 17 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:603719 CAPLUS

DN 103:203719

TI Image forming to eliminate reduced color purity in portions of high color density

IN Yamamoto, Hajime; Matsuda, Hiromu; Yubakami, Keiichi; Takashima, Yuji

PA Matsushita Electric Industrial Co., Ltd., Japan

SO PCT Int. Appl., 19 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN, CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8502470	A1	19850606	WO 1984-JP560	19841122
	W. US				
	Rw. DE, FR, GB				
	JP 60118853	A2	19850626	JP 1983-225921	19831130
	JP 02042222	B4	19900921		
	EP 165319	A1	19851227	EP 1984-904179	19841122
	EP 165319	B1	19910320		
	R. DE, FR, GB				
	US 4613555	A	19860923	US 1985-762149	19850722
PRAI	JP 1983-225921		19831130		
	WO 1984-JP560		19841122		

AB A color electrophotog. process for producing images without reduced color purity in high color d. areas is comprised of electrostatically adhering elec. conductive light-transmitting particles onto a photoconductive surface, exposing the particle layer to a light image, and separating the particles which transmit the light from those which do not transmit the light to obtain a particle image. After the exposure step, the elec. potentials of the particles which transmit the light and the particles which do not transmit the light are equalized and it is thus possible to eliminate the reduction of color purity in high color d. areas. Thus, a red solution comprised of butadiene-styrene resin 100, silica 80, C.I. Pigment Red 5 2.6, C.I. Pigment Orange 21115 5.3, an anionic surfactant 1, 3,7-bis(dimethylamino-10-trichloroacetyl)phenoquinone 8, and H2O 130 weight parts, a green solution comprised of butadiene-styrene resin 100, silica 80, C.I. Pigment Green 36 5.4, C.I. Violet Yellow 20 0.8, β -type Cu phthalocyanine 2.2, an anionic surfactant 0.3, a nonionic surfactant 0.46, 4-(5-chloro-1,3,3-trimethylindolino)methyl-7-(N-methyl-N-phenylamino)-5'-chloro-1',3',3'-trimethylspiro[2H-1-benzopyran-(2H)-indole] 3, and H2O 160 weight parts, and a purple solution comprised of butadiene-styrene resin 100, silica 80, C.I. Pigment Blue 15 3, dioxazine violet 0.5, methyl violet lake 0.5, an anionic surfactant 0.3, and N-(1,2-dimethyl-3-yl)methylidene-2,4-dimethoxyaniline 5, and H2O 160 weight parts were prepared, dispersed in a ballmill, spray-dried to give 5-50 μ red, green, and purple particles, resp., coated with a Cu iodide solution (in MeCN), and dried to give colored particles with a resistivity of approx. 103 Ω -cm. A ZnO photoconductive plate was corona-charged to -400 V, covered with a layer of a mixture of the colored particles prepared above, and photoimaged to produce a color image of excellent quality.

L4 ANSWER 17 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

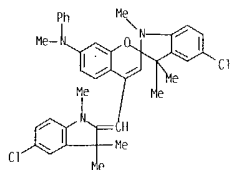
IT 84981-40-8

RL: USES (Uses)

(green light-transmitting conductive toner particles containing pigments and, for color electrophotog.)

RN 84981-40-8 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)



L4 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

L4 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:569859 CAPLUS

DN 103:169859

TI Color electrophotography by using colored light-transmitting particles

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho. 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60125855	A2	19850705	JP 1983-233876	19831212
PRAI	JP 1983-233876		19831212		

AB The title process which provides images with fog-free background by a small amount of light exposure is effected by charging an electrophotog. plate containing a photoconductive substance (e.g., ZnO), attaching on the above charged plate by electrostatic force light-transmitting colored particles (preferably elec. conductive), imagewise exposure of the plate from the particle side, and then removing from the plate light-transmitted particles by adjusting the elec. potential on the particles approx. equal to that of the exposed electrophotog. plates (by applying an elec. potential instead of giving a large amount of light exposure). The remaining colored particle images on the plate are transferred to a clay paper which is then heated to sublime the sublimable leuco dye coated on the particles to form color image on the clay paper.

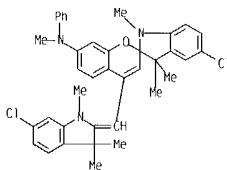
IT 98847-53-1

RL: USES (Uses)

(sublimable dye, color electrophotog. with light-transmitting colored particles from compns. containing)

RN 98847-53-1 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)



L4 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:176525 CAPLUS

DN 102:176525

TI Electrophotographic process

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho. 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60017767	A2	19850129	JP 1983-126413	19830711
PRAI	JP 1983-126413		19830711		

AB A powder electrophotog. process is claimed in which electrostatically charged particles which are optically transparent and elec. conductive are coated on an uncharged electrophotog. plate, then the plate is imagewise exposed and developed by phys. removing the particles which are not electrostatically attracted to the plate. Particles having color-separation capability and containing sublimable dye (or its precursor) are especially useful. Charging of the particles instead of the electrophotog. plate reduces the effect resulting from optical refraction and scattering by the particles, and hence improves the image quality. Thus, a dispersion containing styrene-butadiene rubber, silica, C.I. Pigment Red 5, C.I. Pigment Orange 21.115, and 3,7-bis(diethylamino)-10-trichloroacetylphenoxazine was spray dried to give red particles. Green and blue particles were also prepared by using the same method and by using appropriate dyes and dye precursors. The color photog. images obtained by the above method and particles showed excellent color tone reproduction

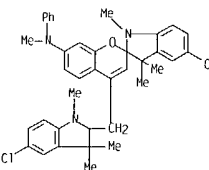
IT 70639-87-1

RL: USES (Uses)

(electrophotog. color-separation filter type toners containing)

RN 70639-87-1 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)



L4 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

L4 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1985:176520 CAPLUS
 DN 102:176520
 TI Electrophotographic color separation filter type toners
 PA Matsushita Electric Industrial Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho. 8 pp.
 COEN: JKXXAF

DT Patent
 LA Japanese

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60017453	A2	19850129	JP 1983-125031	19830708
JP 06023860	B4	19940330		
JP 1983-125031		19830708		

AB Color separation filter type toners for powder electrophotog. process contain sublimable or volatile dyes and are composed of different size particles having similar visible light transmittance. The sublimable or volatile dyes may be color-formers which react with color-developer to give colored substances. Use of the toners results in improved tone reproduction. Thus, butadiene-styrene rubber 100, silica (Snowtex ST-20) 100, 3,7-bis(diethylamino)-10-trichloroacetylphenoxazine (a color-former) 1.8, 4-(1,3,3,5-tetramethylindolinomethyl-7-(N-methylanilino)-1',3',3',5'-tetramethylspiro[2H-1-benzopyran-2,2'-(2H)indole] 0.8 and N-(1,2-dimethyl-3-yl)methylidene-2,4-dimethoxyaniline (sic) 1.5 parts were dispersed in water. Sep. TiO₂ (particle size 0.02-0.1 μ) 6 parts was added to a dispersion having the same composition as the above. The 2 dispersions were spray dried and the resultant particles are treated with a solution containing Cu iodide and poly(vinyl acetate), and the particles are sieved to give TiO₂-free particles of 20-25 μ diameter and TiO₂-containing particles of 15-20 μ diameter. The particles were then mixed, spread on a charged Se electrophotog. plate, then the plate was imagewise exposed, developed by shaking, then clay paper was contacted on the toner images and heated at 180-210° to form clear images on the clay paper.

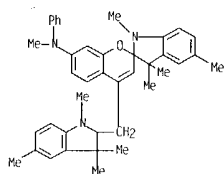
IT 70669-55-5

RL: USES (Uses)
 (electrophotog. toners containing.)

RN 70669-55-5 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 4-[(2,3-dihydro-1,3,3,5-tetramethyl-1H-indol-2-yl)methyl]-1',3',3',5'-dihydro-N,1',3',3',5'-pentamethyl-N-phenyl- (9C1) (CA INDEX NAME)

L4 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 21 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:157957 CAPLUS
 DN 102:157957
 TI Electrostatic color developer paper
 PA Mitsui Toatsu Chemicals, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho. 6 pp.
 COEN: JKXXAF

DT Patent
 LA Japanese

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59101652	A2	19840612	JP 1982-211378	19821203
JP 1982-211378		19821203		

AB The title paper has a coloring layer containing a developer and an dielec. layer permeable to colorless sublimable dyes, and the developer is a nonsublimable quinone derivative having ≥1 electron-attracting substituent(s). The paper is used in a one-shot color electrophotog. process, in which colored transparent beads containing colorless sublimable dyes is electrostatically transferred to the developer paper in imagewise fashion, and the dyes are transferred to the paper by heat to form corresponding colored images. The use of the claimed paper provides high image d. Thus, a paper substrate was coated with a composition containing 2,5-dioctoxycarbonyl-3,6-dibromo-1,4-benzoquinone 5, CaCO₃ 100, colloidal silica (Sylloid 72 from Fuji Davison) 10, and butadiene-styrene copolymer (Dow 636) 15, weight parts and then with another composition containing low mol. weight polyethylene (Peenmarin PN from Sanyo Chemical Ind.) 100, colloidal silica 40, and butadiene-styrene copolymer (Dow 636). Colored beads [(1) green-colored, magenta dye-forming, containing 4-(1,3,3-trimethylindolinomethyl-7-(N-methyl-N-phenyl)amino)-1',3',3'-trimethylspiro[2H-1-benzopyran-2,2'-(2H)indole], (2) red-colored, cyan dye-forming, containing 3,7-bis(diethylamino)-10-dichloroacetylphenoxazine, bis(4-dimethylaminophenyl)methoxyethane] were imagewise transferred from a photoconductor plate to the developer paper electrostatically. Application of heat (200°, 10 s) rapidly formed colored image on the developer sheet.

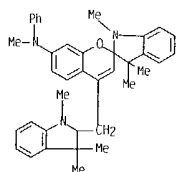
IT 70639-84-8

RL: USES (Uses)
 (magenta dye-forming electrostatog. toner containing, for multicolor image development on quinone derivative-containing paper)

RN 70639-84-8 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3',3',5'-dihydro-N,1',3',3',5'-pentamethyl-N-phenyl- (9C1) (CA INDEX NAME)

L4 ANSWER 21 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



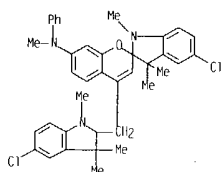
L4 ANSWER 22 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1985:36664 CAPLUS
 DN 102:36664
 TI Composite particles for electrostatic image formation
 PA Matsushita Electric Industrial Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 10 pp.
 COEN: JXXXXAF
 DT Patent
 LA Japanese
 FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59109062	A2	19840623	JP 1982-219401	19821214
JP 03052622	B4	19910812		
JP 1982-219401		19821214		

AB Particles for electrostatic image formation contain several kinds of particles containing sublinable dyes, have different light transmittance, and are not fixed on the image receptor. This provides good gradation range and low background d. Thus, 2 kinds of particles were prepared by spray-drying the comps. which contained butadiene-styrene resin binder (from Nippon Zeon Co.) 100, colloidal silica (Snowtex O from Nissan Chemical Ind.) 100, sublinable color former 3,7-bis(diethylamino)-10-trichloroacetylphenoxazine 2, sublinable color former N-(1,2-dimethyl-3-yl)methylidene-2,4-dimethoxyaniline (sic) 2, sublinable dye C.I. Basic Violet 14 2 weight parts, but 1 of the comps. addnl. contained TiO2 (diameter 0.02-0.1 μm) 6 weight parts. Both particles were coated with a composition containing CuI 2, poly(vinyl acetate) 0.2, and MeCN 100 weight parts. The particles not containing TiO2 and those containing TiO2 were mixed in 3:2 ratio and the mixture was used for image formation by the following process. A photoreceptor having Al substrate and Se photosensitive layer was charged to +6 kV and the particles were uniformly coated on the surface. After removal of excess particles by vibration it was imagewise exposed and was given vibration, to form the image on photoreceptor surface. It was transferred to clay paper receptor after discharging by irradiation, by application of neg. voltage from the paper side. Heating formed pos. image on the paper, which showed gradation range 1.5, compared with 1.1 which was obtained with the 1st particles only, in image formation.

IT 70639-87-1
 RL: USCS (Uses)
 (composite particles for electrostatic image formation containing)
 RN 70639-87-1 CAPLUS
 CN Spiro[2H-1-benzopyran-2,2':-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9CI) (CA INDEX NAME)

L4 ANSWER 22 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

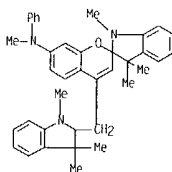


L4 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1984:638082 CAPLUS
 DN 101:238082
 TI Image receptor sheet for one shot color electrophotography
 PA Mitsubishi Paper Mills, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 COEN: JXXXXAF
 DT Patent
 LA Japanese
 FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58179845	A2	19831021	JP 1982-61770	19820415
JP 04015939	B4	19920319		
JP 1982-61770		19820415		

AB In a receptor sheet, which is obtained by forming on an electroconductive support a color developing layer containing an electron acceptor material and optionally a colorless, transparent, and air-permeable dielec. layer, and capable of coloring a colorless, sublinable dye, the electron acceptor material used is a semisynthetic solid acid obtained by using a clay mineral with the regular tetrahedral layer structure of SiO2 and a SiO2 content of 82-96.5% (when dried at 105° for 3 h) by acid treating the clay mineral, treating in an aqueous medium with at least partially dissolved Mg and/or Al comds., neutralizing with acid or base to incorporate Mg and/or Al in the treated clay mineral, and drying. The receptor sheet is used in electrophotog. employing single exposure-single development 1-sheet color image formation.

IT 70639-84-8
 RL: USCS (Uses)
 (in color electrophotog. system with acid clay mineral receptor sheet)
 RN 70639-84-8 CAPLUS
 CN Spiro[2H-1-benzopyran-2,2':-[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 24 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1984:445288 CAPLUS

DN 101:45288

TI Multicolor heat-sensitive recordings

PA Mitsubishi Paper Mills, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho. 3 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAM.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58102796	A2	19830618	JP 1981-203062	19811216
PRAI	JP 1981-203062		19811216		

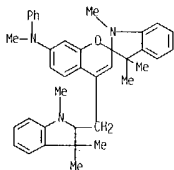
AB Multicolor heat-sensitive recording is effected by combining a transfer sheet obtained by forming on a 5-40 μ thick support a layer containing a multiple number of colorless heat-sublimable dyes having different subliming temperature and an image-receiving sheet obtained by forming on a support a layer containing an acidic substance which forms color with the above colorless heat-sublimable dye and then heating at varied temps. from the transfer sheet side to provide multicolor images. The acidic substance may be an activated clay.

IT 70639-84-B

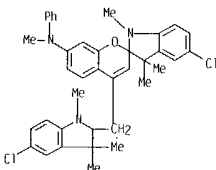
RL: PROC (Process)
(multicolor heat-sensitive recording material with transfer sheet containing)

RN 70639-84-B CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 25 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 25 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1984:414977 CAPLUS

DN 101:14977

TI Color electrophotographic process

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho. 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAM.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 57212463	A2	19821227	JP 1981-97869	19810624
	JP 02013791	B4	19900405		
PRAI	JP 1981-97869		19810624		

AB A color electrophotog. process is described in which an electrophotog. plate having photoconductor layer areas with different spectral sensitivities is electrostatically coated with colored particles whose optical transmission wavelength coincides with the sensitivity wavelength of the areas. the plate is then imagewise exposed, and subsequently developed by blowing off the particles from the exposed areas. The transparent particles may contain sublimable dyes or their leuco derivs. Thus, Se was vacuum deposited on an Al plate through a mask, the mask was then shifted and Cu phthalocyanine was vacuum deposited thereon to give an electrophotog. plate having Se and Cu phthalocyanine areas. Sep. blue particles composed of a melamine resin, a hardener, and C.I. Acid Violet 49 (Acid Violet 6B from Hodogaya Kagaku Kogyo Co.) were coated with a composition containing N-(1,2-dimethyl-3-yl)methylidene-2,4-dimethoxyaniline (sic) and Et cellulose. Red particles composed of a melamine resin, a hardener, methyl orange, and C.I. Acid Red 94 (Aizen Rose Bengal B from Hodogaya Kagaku Kogyo Co.) were coated with a composition containing 3,7-bis(diethylamino)-10-trichloroacetylphenoxazine and Et cellulose. The electrophotog. plate was then pos. charged, uniformly exposed to red light, and the blue particles were spread on the plate to electrostatically coat the Se areas; the plate was then recharged and the Cu phthalocyanine areas coated with the red particles. The coated plate was imagewise exposed and shaken to give color images. The plate was then contacted with a clay-coated paper and heated to give a colored copy.

IT 70639-87-1

RL: USES (Uses)
(toner particles containing, optical filter type, for color electrophotog. process)

RN 70639-87-1 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9CI) (CA INDEX NAME)

L4 ANSWER 26 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1984:219117 CAPLUS

DN 100:219117

TI Dye-transfer sheets for heat-sensitive recording and heat-sensitive recording apparatus

IN Taguchi, Nobuyoshi; Shimizu, Tokihiko; Hotta, Shu; Shimotsuna, Wataru; Arai, Shoji

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 40 pp.

CODEN: EPXXDW

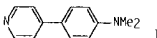
DT Patent

LA English

FAM.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 97493	A1	19840104	EP 1983-303487	19830616
	R: DE, FR, GB				
	JP 59016780	A2	19840127	JP 1982-104926	19820617
	JP 58220788	A2	19831222	JP 1982-105927	19820618
	JP 58222890	A2	19831224	JP 1982-107219	19820621
	JP 59014994	A2	19840125	JP 1982-124640	19820716
PRAI	JP 1982-104926		19820617		
	JP 1982-105927		19820618		
	JP 1982-107219		19820621		
	JP 1982-124640		19820716		

GI



AB A thermal recording material consists of a dye-transfer sheet containing a layer of an aromatic tertiary amine dye and an image receptor sheet with a layer of an electron acceptor. Thus, a 12- μ thick condenser paper support was coated with a composition containing a 2 weight% CHCl₃ solution of 1,8 and a 2 weight% CHCl₃ solution of Ylon 2 parts, dried, and used for recording in an apparatus in which a clay-coated paper was used as a dye-receiver. The recording conditions were as follows: line d. of main and sub scannings 8 dot/mm, recording power 0.2 W/dot, and heating time of thermal head 2-8 ms. Saturation d. of the yellow image was >1.1.

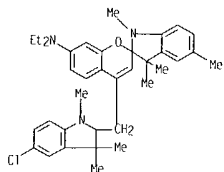
IT 90095-24-2

RL: USES (Uses)
(thermal recording assembly with image-receptor sheet and dye-transfer sheet containing)

RN 90095-24-2 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-N,N-diethyl-1',3',3'-dihydro-1',3',3',5'-tetramethyl- (9CI) (CA INDEX NAME)

L4 ANSWER 26 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 27 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1984:165388 CAPLUS

DN 100:165388

TI Color electrophotography

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho. 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 57185447	A2	19821115	JP 1981-70506	19810511
JP 02013790	B4	19900405		
JP 1981-70506		19810511		

AB An electrophotog. plate is charged, patternwise (stripes or mosaic patterns) coated with colored but optically transparent particles having different color decomposition characteristics, imagewise exposed, and then developed to form colored images. The transparent particles may contain sublimable leuco dyes. Thus, red particles containing a melamine resin, methyl orange, and Aizen Rose Bengal B (C. I. Acid Red 94) were coated with a 3,7-bis(diethylamino)-10-trichloroacetylphenoxazine. Sep., green particles composed of a melamine resin, Sumino Leveling Yellow NR (C. I. Acid Yellow 19), and Kayacron Green A-4G were coated with 4-(5-chloro-1,3,3-trimethylindolino)methyl-7-(N-methylamino)-5-chloro-1',3',3'-trimethylspiro[2H-1-benzopyran-(2H)indole]. And purple-colored particles composed of a melamine resin, Kayacron Turquoise Blue P-GF, and Acid Violet 6B were coated with a yellow-forming leuco dye. Then, an electrophotog. plate was charged, then honeycomb-type mosaic patterns were formed on the plate by using the above 3 different particles, the plate was then imagewise exposed by using a color original, shaken to remove some of the particles to form colored images on the plate, then the images were transferred onto clay-coated paper, heated, and the particles removed to give a colored copy.

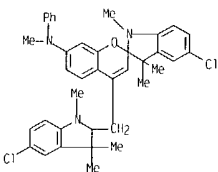
IT 70639-87-1

RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. toners containing, color decomposition-type, for color images)

RN 70639-87-1 CAPLUS

CN Spiro[2H-1-benzopyran-2,2':-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)methyl]-1',3',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)

L4 ANSWER 27 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 28 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1983:135236 CAPLUS

DN 98:135236

TI Image forming process

IN Yubakami, Keiichi; Takashima, Yuji; Shimotsuna, Wataru

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 38 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 67443	A2	19821222	EP 1982-105217	19820615
EP 67443	A3	19830316		
EP 67443	B1	19850502		

R: DE, FR, GB

JP 57207261	A2	19821218	JP 1981-93328	19810616
JP 02045185	B4	19901008		
CA 1163851	A1	19840320	CA 1982-405214	19820615
US 4456669	A	19840626	US 1982-388732	19820615
JP 1981-93328		19810616		

AB Image formation method (useful with electrog., electrophotog., and electrostatic recording) is described which comprises arranging the imaging particles containing a dye former on a support in accordance with the image signals, and heat-transfer of the dye former to a receiver containing a color developing agent. Thus, an electrostatic recording paper was imaged by an electrostatic pin applied with +3 kV voltage, contacted with particles formed from a composition containing styrene-butadiene copolymer 100, colloidal silica 50, Conductex SC 40, 4-(5-chloro-1,3,3-trimethylindolino)methylspiro[2H-1-benzopyran-(2H)indole] 5 weight parts, heated for 0.5 s at 170° (to evaporate the dye former on the support), and the particles were removed by a felt blade soaked with a solution of tartaric acid 1 weight% in MeOH (the blade at the same time developed the areas containing the dye former). Clear images of magenta color with Dmax (smeq) 1.9 were produced.

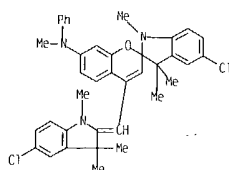
IT 84981-40-8

RL: USES (Uses)
(imaging particles containing, for electrostatic latent image development)

RN 84981-40-8 CAPLUS

CN Spiro[2H-1-benzopyran-2,2':-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-1,3-dihydro-1,3,3-trimethyl-2H-indol-2-ylidene)methyl]-1',3',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)

L4 ANSWER 28 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1982:226586 CAPLUS

DN 96:226586

TI Image forming particles

IN Yubakami, Keiichi; Takashima, Yuji

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 33 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 47006	A2	19820310	EP 1981-106769	19810829
EP 47006	A3	19820421		
EP 47006	B1	19850320		
R: DE, FR, GB				
JP 57046255	A2	19820316	JP 1980-122612	19800903
JP 63045591	B4	19880909		
CA 1166501	A1	19840501	CA 1981-385023	19810902
US 4472490	A	19840918	US 1983-504247	19830617
PRAI JP 1980-122612		19800903		
US 1981-297170		19810828		

AB Transparent elec. conductive imaging particles for use in electrophotog. are described. Each particle has a cubic shape and consists of a thermoplastic resin, a colorless sublimable dye (which develops color through reaction with a color developer), and a coloring agent. The imaging particles provide excellent high purity color images. Thus, a solution containing Sanitex Resin M-3 100, curing accelerator B, Methyl orange 2 and Aizen Rose Bengal B 2, and H2O 100 weight parts was poured into cubic molds, and heated at 150° for 1 min to give red cubic particles 100 weight parts of which were mixed with 50 weight parts of a solution containing a 3,7-bis(diethylamino)-10-trichloroacetylphenoxazine 10, Et cellulose 1, and dichloroethane 89 weight parts, mixed with aqueous solution containing ECR 34 90 and polyelectrolyte 4-th class ammonium salt 10 weight parts, and spray-dried. The imaging composition was prepared by blending equal ams. of the red particles and green particles prepared in the same manner (coloring agents Suminol Leveling Yellow MR and Kayacolor Green A-4G, colorless dye 4-(5-chloro-1,3,3-trimethylindolino)methyl-7-(N-methyl-N-phenyl)amino-5'-chloro-1',3',3'-trimethylspiro[2H-1]-benzopyran[2H]indole)) and blue-purple particles prepared in the same manner (coloring agent Acid Violet 6B, colorless dye N-(1,2-dimethyl-3-yl)methylidene-2,4-dimethoxyaniline). The mixture was applied (in the dark) to a neg. charged ZnO plate and imagewise exposed 10 s with 500 W tungsten lamp. The plate was subjected to a slight vibration (to remove the particles from exposed areas) and then irradiated with white light (attenuation of the latent image). The image was electrostatically transferred to the clay layer face of the image receptor. The receptor paper was then heated from 180

L4 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

to 250° to give a pos. image.

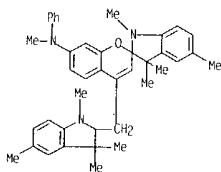
IT 70669-55-5

RL: USES (Uses)

(colloidal, color imaging particles containing, for electrophotog.)

RN 70669-55-5 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 4-[(2,3-dihydro-1,3,3,5-tetramethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3',5'-pentamethyl-N-phenyl- (9CI) (CA INDEX NAME)



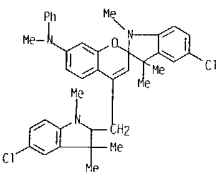
IT 70639-87-1

RL: USES (Uses)

(color imaging particles containing, for electrophotog.)

RN 70639-87-1 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-(2H)indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3',5'-pentamethyl-N-phenyl- (9CI) (CA INDEX NAME)



L4 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1979-542092 CAPLUS

DN 91:142092

TI Light transmission particle for use in an electrophotographic process

IN Ishida, Eisuke; Takashima, Yuji; Nishiguchi, Hisanori; Miyazawa,

Yoshihide; Endo, Shigeru

PA Hodogaya Chemical Co., Ltd., Japan

SO Brit. UK Pat. Appl., 12 pp.

CODEN: BAXXDU

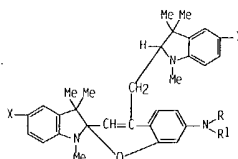
DT Patent

LA English

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI GB 2002913	A	19790228	GB 1978-31020	19780725
GB 2002913	B2	19820210		
JP 54028140	A2	19790302	JP 1977-93822	19770804
JP 56002340	B4	19810119		
US 4238562	A	19801209	US 1978-928420	19780727
PRAI JP 1977-93822		19770804		

GI



AB The title particles useful for forming color images with good resolution and without fogging contain a light-transmitting carrier, a colorless sublimable spirobenzopyran indole dye (I) (R,R' = Me, Et, Ph; X = H, Me, halogen) capable of developing a magenta color, and optionally a coloring agent. Thus, 70 g indole dye (I, R = R' = Et, X = H) [70639-85-9] and 10 g butadiene-styrene copolymer [9003-55-8] were dissolved in 1 kg PhCl. 1 kg glass beads were added, and the mixture was coated onto the beads to give colorless transparent particles. The particles were spread in a single layer over charged photosensitive sheets which were imagewise exposed and vibrated so that the particles on the irradiated parts fell off. Bottom paper sheets for pressure-sensitive copying paper were placed over the sheets and heated 7 s at 200°. When the bottom sheets were removed a clear magenta image was obtained with color d. 1.4.

IT 70639-84-8 70639-85-9 70669-55-5

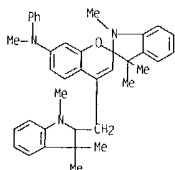
RL: USES (Uses)

(electrophotog. light-transmitting particles containing, for color image

L4 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

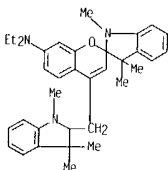
RN 70639-84-8 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)



RN 70639-85-9 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-N,N-diethyl-1',3'-dihydro-1',3',3'-trimethyl- (9C1) (CA INDEX NAME)



RN 70669-55-5 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3,5-tetramethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3',5'-pentamethyl-N-phenyl- (9C1) (CA INDEX NAME)

L4 ANSWER 31 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1979-439350 CAPLUS

DN 91:39350

TI 4-(Indolin-2-yl)methyl-7-substituted amino-spiro[indoline-2,2'-[2H]-1-benzopyrone] derivatives

IN Miyazawa, Yoshihide; Endo, Shigeru; Sugiyama, Haruo

PA Hodogaya Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho. 6 pp.

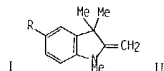
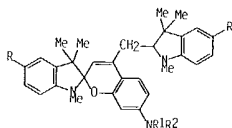
CODEN: JKXXAF

DT Patent

LA Japanese

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54027567	A2	19790301	JP 1977-92962	19770804
JP 63003865	B4	19880126		
PRA1 JP 1977-92962		19770804		



AB Title derivs. I (R, R1, R2 = H, Me, Ph; Me, Me, Ph; H, Et, Et; Cl, Et, Et; Cl, Me, Ph) were prepared by treating II with 3,4-(HO)(HCO)C6H3NR1R2 (III). I are useful as sublimation thermo-sensitive magenta coupler precursors. Thus, a mixture of 0.855 mol II (R = H), 0.427 mol III (R1 = Me, R2 = Ph), and 5 mL Et3N in EtOH was refluxed 6 h to give 82.4% I (R = H, R1 = Me, R2 = Ph).

IT 70639-84-BP 70639-85-9P 70639-86-0P

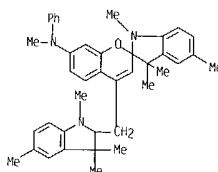
70639-87-1P 70669-55-5P

RL: SPN (Synthetic preparation): PREP (Preparation) (preparation of)

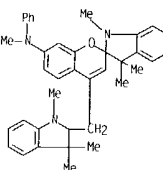
RN 70639-84-8 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)

L4 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

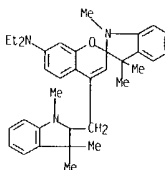


L4 ANSWER 31 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



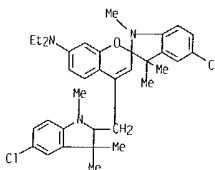
RN 70639-85-9 CAPLUS

CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-N,N-diethyl-1',3'-dihydro-1',3',3'-trimethyl- (9C1) (CA INDEX NAME)



RN 70639-86-0 CAPLUS

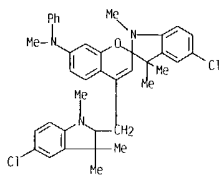
CN Spiro[2H-1-benzopyran-2,2'-[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-N,N-diethyl-1',3'-dihydro-1',3',3'-trimethyl- (9C1) (CA INDEX NAME)



L4 ANSWER 31 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

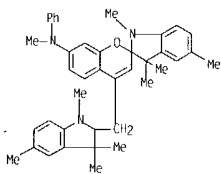
RN 70639-87-1 CAPLUS

CN Spiro[2H-1-benzopyran-2,2':[2H]indol]-7-amine, 5'-chloro-4-[(5-chloro-2,3-dihydro-1,3,3-trimethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3'-tetramethyl-N-phenyl- (9C1) (CA INDEX NAME)



RN 70669-55-5 CAPLUS

CN Spiro[2H-1-benzopyran-2,2':[2H]indol]-7-amine, 4-[(2,3-dihydro-1,3,3,5-tetramethyl-1H-indol-2-yl)methyl]-1',3'-dihydro-N,1',3',3',5'-pentamethyl-N-phenyl- (9C1) (CA INDEX NAME)



L4 ANSWER 32 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

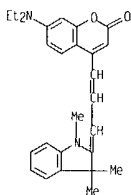
195-7°, 5600, 5400, from II and 2-(2-ethylthiovinyl)-1,3,3-trimethylindoleninium metho-p-toluenesulfonate (VII); 7-diethylamino-4-[3-(1,3,3-trimethylindoleninylidene)propenyl]coumarin, 203-5°, 5600, 5400 from I and VII; 7-methyl-4-[3-(5-methylthio-3-methyl-1,3,4-thiadiazolin-2-ylidene)propenyl]coumarin, 215° (decomp.), . . . from II and 2-(2-acetylanilino vinyl)-5-methylthio-3-methyl-1,3,4-thiadiazolium iodide; 7-methyl-4-[3-(4,4-dimethyl-1-ethyl-2-pyrrolidinylidene)propenyl]coumarin, 178°, . . . from II and 2-(2-acetylanilino vinyl)-4,4-dimethyl-1-ethyl-1-pyrrolinium iodide; 7-methyl-4-[3-(5,6-dimethyl-3-ethyl-2-benzoxazolylidene)propenyl]coumarin, 237°, . . . from II and 2-(2-acetylanilino vinyl)-5,6-dimethyl-3-ethylbenzoxazolium iodide; 7-methyl-4-[3-(5-chloro-3-ethyl-2-benzothiazolylidene)propenyl]coumarin, 262°, . . . from II and 2-(2-acetylanilino vinyl)-5-chloro-3-ethylbenzothiazolium iodide; 5,6-benzo-4-[3-(3-ethyl-2-benzoxazolylidene)propenyl]coumarin, 190°, . . . from 5,6-benzocoumarin-4-acetic acid and 2-(2-acetylanilino vinyl)-3-ethylbenzoxazolium iodide; 6,7-dimethyl-4-[3-(3-ethyl-2-benzoxazolylidene)propenyl]coumarin, 245°, . . . from 6,7-dimethylcoumarin-4-acetic acid and 2-(2-acetylanilino vinyl)-3-ethylbenzoxazolium iodide; 7-methyl-4-[3-(6-methoxy-3-ethylbenzoxazolylidene)propenyl]coumarin, 222°, . . . from II and 2-(2-acetylanilino vinyl)-6-methoxy-3-ethylbenzoxazolium iodide; 4-[3-(3-ethyl-2-benzothiazolylidene)propenyl]coumarin, 235°, . . . from coumarin-4-acetic acid and 2-(2-acetylanilino vinyl)-3-ethylbenzothiazolium iodide; and 7-methyl-4-[3-(3-methyl-2-thiazolidinylidene)propenyl]coumarin, 192°, . . . from II and 2-(2-acetylanilino vinyl)-2-methyl-2-thiazoline p-toluenesulfonate.

IT 103033-51-8, Coumarin, 7-diethylamino-4-[3-(1,3,3-trimethyl-2-indolinylidene)propenyl]-

(preparation of)

RN 103033-51-8 CAPLUS

CN Coumarin, 7-diethylamino-4-[3-(1,3,3-trimethyl-2-indolinylidene)propenyl]- (6C1) (CA INDEX NAME)



L4 ANSWER 32 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1961-53064 CAPLUS

DN 55-53064

OREF 55-10164e-1,10165a-d

TI Methine dyes

IN Kendall, John D.; Waddington, Henry R. J.; Duffin, Geo. F.

PA Ilford Ltd.

OT Patent

LA Unavailable

FAN, CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 856068		19601214	GB	

AB The preparation of methine and polymethine photosensitizing dyes is described. The intermediate 7-diethylaminocoumarin-4-acetic acid (I), m. 159-60° (decompose), was prepared as follows: A mixture of Et acetonedicarboxylate 42, freshly fused anhydrous ZnCl₂ 36, and m-diethylaminophenol 36 g., in EtOH 120 ml. was refluxed 17 hrs., poured into 500 ml. H₂O plus 2 ml. 2N HCl, and the oil was separated and washed with H₂O. The oil was dissolved in 500 ml. Et₂O, washed successively with 1N NaOH and H₂O, dried over Na₂SO₄, and the Et₂O was evaporated. The product was dissolved in EtOAc, and addition of petr. ether precipitated I Et ester, m. 80-2°. This was heated 15 min. with 2N Na₂CO₃ and alc., cooled, H₂O was added, and the solution was filtered. Addition of 2N HCl to max precipitation gave crude product, which was recrystd. from 50% aqueous alc. to give I. 7-Methylcoumarin-4-acetic acid (II), m. 204-6° (decompose), was prepared from m-cresol, citric acid, and H₂SO₄, and 7-methoxycoumarin-4-acetic acid (III), m. 200° (decompose), was prepared from resorcinol mono-Me ether, citric acid, and H₂SO₄. 7-Hydroxy-4-[(3-methyl-2-benzothiazolylidene)methyl]coumarin, m. 313-14° (EtOH), was prepared by refluxing 7-hydroxycoumarin-4-acetic acid 0.88 g., 2-methylthiobenzothiazole-MeI (IV) 1.3 g., pyridine 10 ml., and Et₃N 2 ml. for 1 hr. and precipitating with H₂O. Other dyes were similarly prepared from the following reagents (m.p., spectral limit, and spectral maximum in A. given): 7-methyl-4-[(3-methyl-2-benzothiazolylidene)methyl]coumarin, 237-9°, 5200, 4400, from II and IV; 7-methyl-4-[3-(3-ethyl-2-benzothiazolylidene)propenyl]coumarin, 235-7°, 6400, 5200-5800, from II and 2-(2-acetylanilino vinyl)benzothiazole-EtI (V); 7-diethylamino-4-[3-(3-ethyl-2-benzothiazolylidene)propenyl]coumarin, 234-6°, 6300, 5000-5800°, from I and V; 7-methoxy-4-[3-(3-ethyl-2-benzothiazolylidene)propenyl]coumarin, 203-5°, 6300, 5000-5800, from III and V; 7-methyl-4-[3-(3-ethyl-2-benzoxazolylidene)propenyl]coumarin, 228-30°, 6000, 4200, from II and 2-(2-acetylanilino vinyl)benzoxazole-EtI (VI); 7-diethylamino-4-[3-(3-ethyl-2-benzoxazolylidene)propenyl]coumarin, 190-2°, 6000, 5400, from I and VI; 7-methoxy-4-[3-(3-ethyl-2-benzoxazolylidene)propenyl]coumarin, 189-91°, 6000, 4200-5400, from III and VI; 7-methyl-4-[3-(1,3,3-trimethylindoleninylidene)propenyl]coumarin.

L4 ANSWER 32 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

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(FILE 'HOME' ENTERED AT 15:17:37 ON 15 SEP 2004)

FILE 'REGISTRY' ENTERED AT 15:18:05 ON 15 SEP 2004

L1 STRUCTURE UPLOADED

L2 2 S L1

L3 33 S L1 FULL

FILE 'CAPLUS' ENTERED AT 15:19:23 ON 15 SEP 2004

L4 32 S L3

E CZERNEY PETER/AU

L5 91 S E3

E WENZEL MATTHIAS/AU

L6 17 S E3

E SCHWEDER BERND/AU

L7 11 S E3

E FRANK WILHEIM/AU

L8 32 S E4

L9 140 S L5 OR L6 OR L7 OR L8

L10 9 S L9 AND POLYMETHINE

=> d que 110

L10 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:485828 CAPLUS

DN 141:39728

TI Hydrophilic fluorescent marker dyes based on benzopyrrolo-polymethines

IN Czerney, Peter; Schweder, Bernd; Wenzel, Matthias; Frank, Wilhelm

PA Dyomics GmbH, Germany

SO Eur. Pat. Appl., 24 pp.

CODEN: EPXXDW

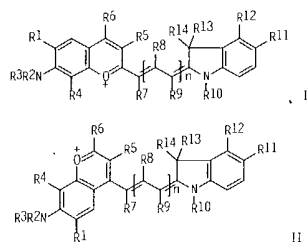
DI Patent

LA German

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1428858	A1	20040616	EP 2003-28306	20031209
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10258150	A1	20040708	DE 2002-10258150	20021210
US 2004162423	A1	20040819	US 2003-732928	20031210
PRAI DE 2002-10258150	A	20021210		

GI



AB The title dyes I and II; R1-R14 = H, alkyl, tert-alkyl, (carboxy)aryl, (hetero)cycloalkyl, alkoxy, OH, NO₂, cyano, etc.; R1R2, R2R3, R3R4, R5R7, R9R10, R11R12, R12R13 can form (hetero)aliphatic or aromatic ring; ≥1 of R1-R14 can contain solubilizing or ionizable or ionized substituent(s).

L10 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:451816 CAPLUS

DN 139:37939

TI Fluorescent polymethine dyes and their use

IN Czerney, Peter; Wenzel, Matthias; Schweder, Bernd; Lehmann, Frank

PA Dyomics G.m.b.H., Germany

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DI Patent

LA German

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1318177	A2	20030611	EP 2002-26999	20021205
EP 1318177	A3	20030716		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
DE 10160524	A1	20030626	DE 2001-10160524	20011205
US 2003165942	A1	20030904	US 2002-310206	20021205
PRAI DE 2001-10160524	A	20011205		

OS MARPAT 139:37939

AB Fluorescent cationic and amphoteric polymethine dyes with pyridinium, indolium, or quinolinium groups are disclosed which are suitable for mol. or biochem. marking or labeling purposes. The dyes are characterized by good stability and high fluorescence quantum yields and Stokes shifts and emit at >520 nm. In an example, 7-(dimethylamino)-2-oxo-2H-chromene-3-carboxaldehyde was condensed with 1-(5-carboxypentyl)-2-methylpyridinium bromide to give 35x 1-(5-carboxypentyl)-2-[(E)-2-(7-(dimethylamino)-2-oxo-2H-chromen-3-yl)vinyl]pyridinium bromide (λ_{max} 480 nm, λ_{em} 600 nm).

L10 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

≥1 R1-R14 can contain reactive groups for covalent bonding to substrates; n = 0, 1-3; provisos are given] having improved hydrophilicity, increased extinction coeffs. and photo- and storage stability are useful for optical marking and detn. of amino acids, proteins, antibodies, nucleic acids, DNA, RNA, polymers, drugs, etc. For example, adding 75 μL HC(OMe)3 in 1 mL pyridine to a soln. of 180 mg 2-tert-butyl-7-diethylamino-4-methylchromenyl tetrafluoroborate and 242 mg 3-(3-ethoxycarbonylpropyl)-2,3-dimethyl-5-sulfonato-1-(3-sulfonatopropyl)-3H-indolium Na salt in 50 mL Ac₂O, stirring the mixt. for 30 min at 140°, evapg. the reaction mixt., refluxing the solid residue in a mixt. of 10 mL acetone and 10 mL of 2 M HCl and neutralizing with NaHCO₃ gave 145 mg of carboxypropyl-functional polymethine dye [I1: R1 = R4 = R5 = R7 = R8 = R9 = R12 = R13 = H, R2 = R3 = Et, R6 = Me, R10 = O3S(CH₂)3, R11 = SO₃, R14 = Me, n = 1] as Na salt. This (15 mg) was converted to active ester with 4 mg N-hydroxysuccinimide in the presence of 14 mg dicyclohexyl carbodiimide and used to prep. a streptavidin conjugate showing narrowed aggregation bands in UV-Vis spectrum.

RE CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:868588 CAPLUS

DN 136:7646

TI Stable near-IR fluorescent marker dyes based on benzopyrylium-polymethines and their use

IN Czerney, Peter; Frank, Wilhelm; Lehmann, Frank; Schweder, Bernd; Wenzel, Matthias

PA Dyomics G.m.b.H., Germany

SO PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DI Patent

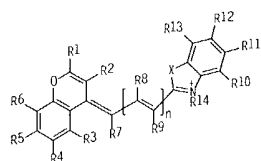
LA German

FAN CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001090253	A1	20011129	WO 2001-01946	20010522
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 10025820	A1	20011206	DE 2000-10025820	20000523
DE 10025820	C2	20030626		
AU 2001065811	A5	20011203	AU 2001-65811	20010522
BR 200106715	A	20020416	BR 2001-6715	20010522
EP 1283855	A1	20030219	EP 2001-943135	20010522
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003534435	T2	20031118	JP 2001-587056	20010522
US 2002115862	A1	20020822	US 2002-31741	20020122
US 6750346	B2	20040615		
PRAI DE 2000-10025820	A	20000523		
DE 2000-20022277	U	20000523		
WO 2001-01946	W	20010522		
OS MARPAT 136:7646				

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L10 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



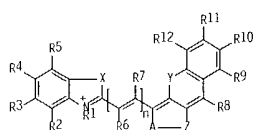
AB The invention relates to so-called laser-compatible NIR marker dyes based on **polymethines** for use in optical, in particular, fluorescence optical determination and detection methods, for example, in the fields of medicine, pharmaceuticals and in the areas of life science, materials science, and environmental science. The aim of the invention was to create NIR marker dyes based on **polymethine** which have a high degree of photostability and stability in storage as well as a high fluorescence yield and which can be excited to fluorescence in the easiest possible manner by means of laser radiation in the visible or NIR spectral range, particularly with light of an argon, helium/neon, or diode laser. According to the invention, dyes based I (R1-R14 = H, organic group with adjacent groups optionally forming fused aromatic rings, OH, whereby at least one group is solubilizing in water and at least one group can react with the substance to be marked; X = O, S, Se, alkylimino, dialkylmethylene; n = 0-3) are used.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:646079 CAPLUS
DN 133:239376
TI Laser-compatible NIR marker dyes
IN Czerney, Peter; Lehmann, Frank
PA Dymovics, Germany
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000053678	A1	20000914	WO 2000-DE802	20000309
DE 19911421	A1	20001005	DE 1999-19911421	19990311
DE 1999-19911421	A	19990311		
OS MARPAT 133:239376				
GI				



AB The aim of the invention is to provide NIR-marker **polymethine** dyes such as I (R1-R12 = H, organic group, OH, ionizable group; X, Y = O, S, Se, imino, dialkylmethylene; A, Z = H; AZ together may form an aliphatic, heteroaliph., lactone, or thiolactone linkage; n = 1-3) with high photochem. and storage stability as well as high fluorescence yield, in which fluorescence can be excited as simply as possible by means of laser radiation in the visible or NIR spectral range. Thus, 3-(diethylamino)-6-(ethoxymethylene)-7,8,9,10-tetrahydro-6H-(5-oxonaphthalene)-6-perchlorate was prepared and converted to 3-(diethylamino)-6-[2-[(1-(5-carboxypentyl)-3,3-dimethyl-5-sulfonato-1,3-dihydro-2-indolylidene)ethylidene]-7,8,9,10-tetrahydro-6H-(5-oxonaphthalene)-6] betaine. This compound after esterification with N-hydroxysuccinimide could be used to label human serum albumin.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

L10 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:382524 CAPLUS
DN 133:28120
TI Signals from the world of molecules
AU Czerney, Peter; Grumt, Ulrich-Walter
CS Institut für Physikalische Chemie, Jena, 07743, Germany
SO Biotech (Markttheidenfeld, Germany) (2000), 12(1), 34-36
CODEN: BMGE9; ISSN: 0937-2725
PB Mediatec Verlag und -Service
DT Journal: General Review
LA German
AB A brief review without refs. New near IR (NIR) indicators.

polymethines were developed with high stability and structural variability on the basis of fluorescence. These high-sensitive markers have an emission maximum at 650 nm. The dyes were optimized for different applications in life sciences. Reversible changes of light absorption on the basis of proton-transfer processes were used for the non-invasive determination of cation and anion concns.

L10 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:239885 CAPLUS

DN 128:295820

TI 3,1'-bridged 2-[2'-(4'''-dialkylaminophenyl)ethenyl]pyrylium and 1-benzopyrylium dyes. Synthesis and vis/NIR absorption/emission behavior

AU Czerney, Peter; Grummt, Ulrich W.; Guenther, Wolfgang

CS Inst. Physikalische Chem., Friedrich-Schiller-Univ., Jena, D-07743, Germany

SO Journal fuer Praktische Chemie/Chemiker-Zeitung (1998), 340(3), 214-222

CODEN: JPCCEM; ISSN: 0941-1216

PB Johann Ambrosius Barth

DT Journal

LA English

AB A series of new 3,1'-bridged 2-[2'-(4'''-dialkylaminophenyl)ethenyl]-4,6-diarylpyrylium perchlorates, 2-[2'-(4'''-dialkylaminophenyl)ethenyl]-7-diethylamino-1-benzopyrylium perchlorates, 2-[4'-(4'''-dialkylaminophenyl)butadien-1'-3'-yl]-, and 2-[2'-(7'''-diethylaminocoumar-3''-yl)ethenyl]-7-diethylamino-1-benzopyrylium perchlorates were synthesized and characterized by means of elemental anal., m.p., Vis/NIR, and ¹H NMR spectra. Semiempirical MO calcns. were performed to elucidate the essential features of the chromophores. The size of the bridging ring strongly affects the geometry of the chromophores which, in turn, detcs. the extent of charge transfer of the longest wavelength electronic transition. Increasing deviation from planarity causes the polymethine-like chromophore to become more polyene-like.

L10 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:909371 CAPLUS

DN 123:328758

TI Proton-carrier pH indicator dyes for the near infrared spectral region

IN Czerney, Peter; Grummt, Ulrich Walter; Lindauer, Heike; Mohr, Gerhard

PA Friedrich-Schiller-Universitaet Jena, Germany

SO Ger. Offen., 11 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 4341618	A1	19950608	DE 1993-4341618	19931207
PRAI DE 1993-4341618		19931207		
OS MARPAT 123:328758				

AB Anhydro bases of proton-carrier polymethine dyes with specified structures are converted to styrylcyanine, pyrylomethinecyanine, and benzopyrylomethinecyanine dyes as a function of pH. The dyes can be used as indicators from pH 2 to 12. They can be applied to the surface of carrier substances, e.g. glass plates or polymer foils, and protected by long aliphatic substituents against washing out. They can be used for determining acids or bases, e. g. pollutants in gases or liqs. They can be applied with a light source (LED or diode laser) or photoreceiver (CCD element or multiplier). Absorption maximum and pKa data of examples (in 1:1 H₂O-isopropanol) are given.

L10 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:831818 CAPLUS

DN 123:259741

TI Synthesis of amphiphilic styrylpyridinium and styrylquinolinium hemicyanines and merocyanines

AU Lehmann, Frank; Mohr, Gerhard J.; Czerney, Peter; Grummt, Ulrich-W.

CS Inst. Phys. Chem., Friedrich Schiller Univ. Jena, Jena, D-07743, Germany

SO Dyes and Pigments (1995), 29(1), 85-94

CODEN: DYPIDX; ISSN: 0143-7208

PB Elsevier

DT Journal

LA English

AB Amphiphilic polymethine dyes are synthesized by alkylation of 4-methylpyridine and 4-methylquinoline and consequent condensation with hydroxy- or amino-substituted aromatic aldehydes. The resulting dyes are characterized with respect to their absorption and emission spectra. The synthetic approach is generic in that it allows adjustment of the phys. properties of the resp. dyes (absorption, fluorescence, charge transfer, lipophilicity) and provides chromophores useful for the preparation of Langmuir-Blodgett films with nonlinear optical properties and as potential-sensitive dyes in anal. chemical

L10 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1995:251104 CAPLUS

DN 122:58161

TI New near infrared absorbing acidochromic dyes and their application in sensor techniques

AU Lindauer, Heike; Czerney, Peter; Mohr, Gerhard J.; Grummt, Ulrich-W.

CS Inst. of Physical Chem., Friedrich-Schiller-Univ., Jena; 07743, Germany

SO Dyes and Pigments (1994), 26(3), 229-35

CODEN: DYPIDX; ISSN: 0143-7208

PB Elsevier

DT Journal

LA English

AB Two new acidochromic styrylcyanines and one new benzopyrylotrimethinium dye were described. Their visible and near-IR absorption spectra were recorded as a function of pH in fluid solution and embedded in polymer layers. The layers proved to be useful as pH sensors.

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